



DEPARTMENT OF PERMITTING SERVICES

Douglas M. Duncan
County Executive

May 9, 2002

Robert C. Hubbard
Director

Mr. Jeffery Strulic
Charles P. Johnson & Associates
1751 Elton Road
Silver Spring, MD 20903

Re: Stormwater Management **CONCEPT** Request
for Clarksburg Town Center Phase 2
Preliminary Plan #: 1-95042
SM File #: 204464
Tract Size/Zone: 70.3 acres/RMX-2
Total Concept Area: 70.3 acres
Tax Plate: EW
Lots/Block: G, I, J, K, L, M, N, P, R, S & T
Parcel: A
Liber/Folio: 6776/876, 8825/755
Monig. Co. Grid: 09D03
Watershed: Little Seneca Creek

SPECIAL PROTECTION AREA

Dear Mr. Seidleck:

Based on a review by the Department of Permitting Services, the Final Water Quality Plan (FWQP) for the above mentioned site is conditionally approved.

Site Description: The site is the remaining portion of the Clarksburg Town Center and consists of 70.3 acres located between Clarksburg Road, Piedmont Road, and Stringtown Road. The proposed zoning of the site is RMX-2 and will consist of mixed residential (single-family detached, townhouses, apartments and condominiums) along with a school, park and associated infrastructure. This site is located in the Clarksburg Special Protection Area (SPA) of the Little Seneca Creek Watershed.

Stormwater Management: Water quantity control for this phase will be provided via an extended detention dry pond and the existing wet pond #1. Pond #1 provides infiltration for the one-year storm and pond #3 will provide control of the one-year storm, with an adjustable release rate for a maximum of 24 hours detention time in accordance with the new state standards. Quality control will be provided via a treatment train that consists of vegetated conveyance swales, bio-retention structures (for small drainage areas), surface sand filters, infiltration structures (where feasible) and ground water recharge areas for the rooftops. In areas where open section roads are not feasible, additional water quality structures are required to offset the lost benefits that open section roadways provide. These offsetting structures may include additional infiltration structures, bio-retention structures or surface sand filters. Areas that are intended for vehicular use are to be pretreated prior to entering any water quality structures. The water quality structures must be sized to treat a minimum of one-inch over the proposed impervious area.

The locations of open section and closed section roads along with the locations and nature of all of the proposed water quality control structures (including the offsetting water quality structures for the loss of open section roads) must be clearly identified on the initial sediment control/stormwater management/water quality plan. Additional monitoring may be required depending on the final location and configuration of the water quality structures.



Sediment Control: Redundant sediment control structures are to be used throughout the site. These are to include upland sediment traps, which drain to secondary traps down grade, or when this is not feasible, sediment traps with forebays will be acceptable. All sediment-trapping structures are to be equipped with dewatering devices. The following features are to be incorporated into the detailed stormwater manage/sediment control plan:

1. All pertinent stormwater management structures must be designed, approved, permitted, and bonded with the initial sediment control plan. Phasing or otherwise delaying permitting of stormwater structures will be unacceptable.
2. The earth dikes that feed the sediment traps are to be constructed as a type B dike utilizing trapezoidal channels to reduce flow rates.
3. The site grading shall be phased, whenever possible, to limit disturbance and immediate stabilization is to be emphasized.
4. Silt fence alone will not be allowed as a perimeter control. The use of multiple rows of super silt fence will be acceptable for small areas of disturbance.

Performance Goals and BMP Monitoring: See the attached addendum dated May 8, 2002, and for further information contact Keith Van Ness at MCDEP.

NOTE: The addendum to the Final Water Quality Plan for Clarksburg Phase II detailing the Performance Goals, how the goals will be met, and a detailed BMP Monitoring Plan must be received and approved by DPS prior to submission of detailed sediment control and stormwater management plans.

Conditions of Approval: The following conditions must be addressed in the initial submission of the sediment control plan: This list may not be all-inclusive and may change based on available information at the time of the review:

1. Due to the relatively low use of open section roads, every opportunity to provide additional groundwater recharge throughout the site must be taken. This is to include areas along the backs of lots and any other open area (e.g., parking islands, under play fields, tot lots, open space around buildings, etc.). If sufficient recharge can not be provided in these areas, lots may have to be deleted.
2. Should MNCPPC/EPD determine that all pond embankments must be moved back from the environmental buffers 15 feet, MCDPS may require a realignment of lot lines to assure adequate space for all structures.
3. Under no circumstances will any slope into, on, or around any stormwater structure be allowed to be steeper than three feet horizontal to one-foot vertical ratio. Any location where this occurs may be required to either, realign lot lines or constructed re-enforced concrete retaining walls. Note: Wood retaining walls will be unacceptable on the stormwater manage parcels.
4. All stormwater management structures, along with a 12-foot wide driveway for access, will be required to be located on stormwater parcels. This is not applicable where the structures are constructed under parking lots or in islands.

5. Provide safe conveyance of all runoff to one of the stormwater management structures as shown by the drainage divides on the plan.
6. All recharge structures will be excavated to existing ground; none are to be constructed in fill.
7. Sand filter #10 and the infiltration structure above it will need to be reversed or combined to provide a series treatment system.
8. Sand filter #10's underdrain will discharge to the stream valley, not back to the storm drain system.
9. It appears that sand filter #10 will be designed as a NRCS-MD 378 pond. As one, it will be required to meet most criteria. Further discussion should take place prior to beginning its design.
10. A further review of the roof top areas to the recharge structures may need to be adjusted due to architecture designs.
11. It appears that a few lots near proposed quantity control structure drain directly into the structure without being treated for quality control. Quality control is required for all impervious areas.
12. Provide clear access to all stormwater management structures from a public right-of-way.
13. The proposed water quality inlets must be approved by DPS (a drop manhole will not be acceptable).
14. Water quality structures used for sediment control must have a minimum undisturbed buffer of two feet from the bottom of the sediment trap to the bottom of the stormwater structure.
15. At a minimum, one foot of stone (dead storage) is to be provided below the outlet pipe of all of the proposed surface sand filters to provide additional groundwater recharge.
16. All of the proposed stream crossings are to use environmentally sensitive design criteria.
17. Percolation tests must be performed to determine the feasibility of providing infiltration structures for water quality and ground water recharge.
18. Provide a tree-planting plan to allow for shading of the dry pond outfalls (into the low flow channels and out of the ponds).
19. MCDPS reserves the right to require the developer to provide full-time, third-party, on-site, sediment control inspection if the department decides the goals of the Water Quality Plan are not being met.

Any divergence from the information provided to this office; or additional information received during the development process; or a change in an applicable Executive Regulation may constitute grounds to rescind or amend any approval actions taken, and to reevaluate the site for additional or amended Water Quality Plan requirements.

Jeffery Strulic
May 9, 2002
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If you have any questions regarding these actions, please feel free to contact Richard Gee at (240) 777-6333 or Leo Galanko at (240) 777-6242.

Sincerely,

A handwritten signature in black ink, appearing to read "Leo Galanko for", written over the typed name.

Richard R. Brush, Manager
Water Resources Plan Review Section
Division of Land Development Services

RRB: enm: CN204464

cc: M. Shaneman
M. Pfefferle
L. Galanko
SM File # 204464

Qn: on-site 70.3 ac
Ql: on-site 70.03 ac.



DEPARTMENT OF ENVIRONMENTAL PROTECTION

Douglas M. Duncan
County Executive

James A. Caldwell
Director

Attachment to the Final Water Quality Plan for Clarksburg Town Center Phase II Description of Monitoring Requirements

Date: May 8, 2002
Preliminary Plan #: 1-95042
SM File #: 204464

The purpose of this attachment is to add specificity to the county BMP monitoring protocols and to the BMP monitoring plan described in the addendum to the FWQP for Clarksburg Town Center Phase II. Some supplemental monitoring, QA/QC, data analysis, reporting and record keeping tasks will be explained in this attachment.

This BMP monitoring is being done to address whether the site performance goals outlined in the addendum to the FWQP for Clarksburg Town Center Phase II were met or not. The purpose of the data analysis and reporting is to describe quantitatively how the performance goals were met. Monitoring efforts and reports must employ scientific methods in an attempt to determine effectiveness of BMPs. Monitoring is to be done according to DEP BMP Monitoring Protocols. However, these monitoring protocols are intended to provide a framework only. Some supplemental requirements are provided in this attachment. Thorough and careful analysis of data is required. Data analysis methods employed may vary depending on the results obtained. Methods and assumptions should be detailed. DEP BMP Monitoring Protocols are available at <http://www.co.mo.md.us/services/dep/Publications/pdf%20files/bmpprotocols.pdf>

Specific Monitoring Requirements

1. BMP monitoring reports must include a table with dates of all major construction activities which take place on the site. (Groundbreaking, clearing, grading, BMP construction, BMP conversion, pond maintenance, sediment spills and cleanup, etc.)
2. Annual base flow and flow-weighted stormwater samples will continue to be collected as during pre-construction. Results should be compared to previous results to determine the effects of BMPs and the project overall.
3. Continuous flow data will be collected as during pre-construction. Results will evaluate the effect of BMPs and the project on stream flows. Lag times, base flows, storm peaks, and other parameters will be examined and compared to pre-construction conditions.



Watershed Management Division

4. Stream water temperatures will be monitored at the three locations designated during the pre-construction period. This monitoring will occur from June 1 through October 1 each year. Equipment accuracy is to be checked prior to use in spring. An accuracy check after retrieval in fall may be necessary depending on results obtained. Consult with equipment manufacturer or DEP for appropriate procedures. All accuracy checks are to be submitted with data analysis and reports. Temperature loggers should be set to take readings as frequently as possible. Consult with DEP if readings will be taken less frequently than every 30 minutes. Data from the loggers is to be closely compared to preconstruction conditions to identify any patterns indicating temperature impacts of the project. Rainfall, air temperature and flow data should be considered in the analysis. Rain and temperature gages will be maintained on the site to collect the relevant data. Analysis should be presented with illustrative graphs and conclusions regarding BMP effectiveness.
5. TSS grab sample locations will be established at a sediment pond on the site during construction. Exact sampling locations will be determined by DEP in the field to allow evaluation of the effectiveness of redundant sediment traps. Sampling is to be done quarterly during storm events throughout the construction phase. Storms should have at least one half inch of rainfall in a 24 hour period to be counted towards this requirement. Samples should be collected within 24 hours after the storm. The storms during which the data was collected should also be characterized for duration and total rainfall. Storm frequency (return interval) should be reported as described in Technical Paper #40 of USDOC Weather Bureau. Results should be examined to determine the efficiency of the structure and percent removal of pollutants. Data should be compared to past periods and graphs should be provided to support conclusions.
6. Quarterly photographic monitoring of selected outfalls will be required to determine the stability of the area. DEP will locate sites for these photos in the field with the consultant. Photos should be taken from the same location, height, etc. to facilitate comparison. An object of known size should be included with each shot to provide a frame of reference. Reports should evaluate whether flows from the structure are causing erosion or instability.
7. Embeddedness readings will continue as during pre-construction. Photos of the stream bottom should be taken concurrently with embeddedness readings. Reports should compare pre-construction data with data collected during subsequent periods to evaluate the effect of the project. Graphs should be presented along with conclusions.
8. Groundwater monitoring will continue as during pre-construction. Actual elevation of the groundwater should be reported as well as the depth to water from the ground surface. Data should be analyzed to determine the effectiveness of site design and stormwater management in providing infiltration and maintaining groundwater levels. Data from the pre-construction period should be compared to results obtained in subsequent periods. Graphs should be provided to support conclusions.

9. Cross sections established during pre-construction will be monumented and surveyed annually. Data will be plotted and compared over time to evaluate channel stability in the tributary. Photos of the cross section looking upstream and downstream should be collected annually also. Photos should be taken from the same location, height, etc. to facilitate comparison. An object of known size should be included with each shot to provide a frame of reference. Reports should evaluate whether the BMPs are effectively preventing degradation of the channel.
10. Sampling of water quality BMP's will be performed to ascertain their effectiveness and the benefits of redundant design. Grab samples will be collected from the baseflow of pond 3. Automated flow-weighted stormwater samples will be collected from additional BMPs (bioretention filters, groundwater recharge trenches, clean water recharge trenches and sand filters) at inflow and outflow points. Stormwater samples require 0.5 to 1 inch of rain over a 24 hour period not to exceed one inch over 24 hours. Reports should include information on the duration, total rainfall and return interval of the storm based on the site rain gage. Samples will be analyzed for TSS, nitrate, ortho-phosphorus, metals, BOD, TKN, total phosphorus, petroleum hydrocarbons and herbicides/pesticides. Loadings should be estimated where possible and comparisons made to published results for other BMP designs.

Monitoring requirements 1 through 9 will be in effect throughout the construction period. Following completion of construction, TSS monitoring of the sediment pond (requirement 5) will terminate. Post-construction monitoring (requirements 1-4, and 6-9) will continue for five years after construction. Sampling of water quality BMPs (requirement 10) will also have a duration of five years. Reports on BMP monitoring are due to DEP by May 30 and October 31 of each year. County code requires that reports be submitted quarterly. These quarterly reports may be incorporated in these semi-annual reports. This should be reflected in the title of the documents. BMP monitoring reports are to be delivered with data in an electronic format to Mark Sommerfield at Montgomery County DEP and also to Leo Galanko at Montgomery County DPS. Monitoring requirements 1 through 9 above will be in effect throughout the construction phase of the project. Post construction monitoring TSS readings from the sediment ponds (requirement #5) will not be required. The other monitoring requirements will be in effect for three years after the development is completed. Questions on the monitoring requirements and procedures may be directed to the following personnel.

Mark Sommerfield
(240) 777-7737
mark.sommerfield@co.mo.md.us

Doug Marshall
(240) 777-7740
douglas.marshall@co.mo.md.us

Leo Galanko
(240) 777-6242
leo.galanko@co.mo.md.us